```
**********************************************************************
*                                                                    *
*          QQQQQQQQ        ZZZZZZZZZZ      XX      XX              *
*         QQQQQQQQQQ       ZZZZZZZZ          XX    XX               *
*         QQ      QQ             ZZ          XX XX                  *
*         QQ      QQ            ZZ            XXX                   *
*         QQ      QQ           ZZ             XXX                   *
*         QQ    QQ QQ         ZZ               XX XX                 *
*         QQQQQQQQQQ          ZZZZZZZZ        XX   XX               *
*          QQQQQQQQ           ZZZZZZZZZZ      XX     XX             *
*                QQ                                                  *
*                                                                    *
**********************************************************************
```

The Journal Covering Amateur Radio & Sinclair Computers
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K5XY
Alex. F. Burr
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Bo Barry
Editor

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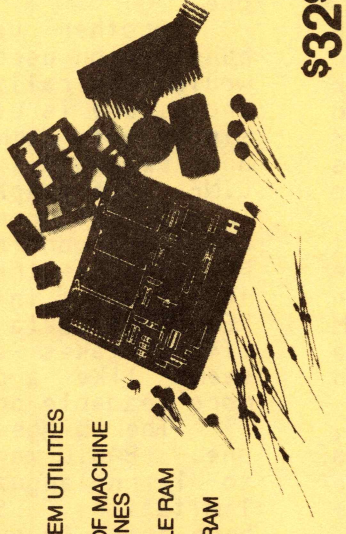

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What a super product!...conceived and executed very nicely...and with quality components. **(SYNTAX QUARTERLY Winter 82)**

8K Nonvolatile memory is a gem! It has so many possible uses...I recommend this board most heartily. **(OKLAHOMA S.U.G. Newsletter 1/3)**

We found the documentation to be far superior to that (of) most hardware we've received. **(S.U.N. Newsletter Nov/Dec 82)**

For versatility this is even better than an EPROM...ranks quite high on the list of "must-haves"... **(SYNC Magazine Mar/Apr 83)**

Provides the user with instant software...an extremely versatile memory extension... **(Z-WEST June 83)**

INTRODUCTION

This memory board is designed to fill the transparent 8K block of memory (from 8K to 16K) in a ZX81-16K system. This area of memory is an ideal place to store, either permanently or temporarily, machine language routines or data which are to be used by the BASIC system.

Sample utilities are included with the kit.

The use of HM6116LP 2K CMOS RAM memory IC's with their own reserve power supply means that routines stored in the RAM are nonvolatile — the RAM retains its memory even when the ZX81 is switched off or reset. Moreover, being RAM, the routines you store in the memory are easily modified. The lithium cell supplied with the board will maintain sufficient reserve power for almost ten years.

ASSEMBLY

Complete step-by-step instructions in a 20 page manual make assembly of the board easy. The kit (pictured above) is complete with a silkscreened solder-masked printed circuit board, all capacitors, resistors, transistors, sockets, connectors, integrated circuits, and the lithium cell. The board is supplied with one 2K CMOS 6116LP-3 RAM — it will accomodate three more for a total of 8K.

Complete kit with one 2K 6116LP-3	$32.95
Additional three 6116LP-3	~~$19.90~~ $13.05
Bare pc board & manual	$22.95
Kit for EPROM use only	$47.95
Assembled & tested with 2K	$65.95
Assembled & tested with 8K	$ 1.95
Shipping & handling per order	

20.00

Send check or money order to the address below.

HUNTER, 1630 FOREST HILLS DRIVE, OKEMOS, MI 48864

Using "NRAP" with RS-232

Mike Berkowitz, WA9ESX
5305 N. 35th Street
Milwaukee, WI 53209

After playing around with RTTY for almost a year, I sure missed being able to show off some 'hard copy' to visitors. When I saw the print sample in QZX, I picked up a Brother EP44 typewriter/printer, and sent off to Bob Berch (155 7th St, Rochester, NY 14609) for the plans and software to run a serial printer; all for $5.00!

The output is through the cassette/video circuits, and there are already holes in the Timex boards for 2 wires that run to a sub-mini jack that I hung outside one of my TS1000s. Berch claims that the jack fits, but I couldn't do it. On the Timex I use for RTTY, I wired a small shielded cord out of the alternate modulator hole to the interface, which is a 741 op amp and 2 nine volt batteries, hooked up as a zero-crossing detector to provide the + & - 8 volts for RS-232 levels.

The printer software consists of 256 bytes of code, and has five entry points for copying a string (Z$ in the listing from Berch), or a single character ZX or ASCII code, poked into D15417, or a copy of the screen or a program listing and continue listing after a break.

The machine code can be relocated by changing 10 address-specific calls. After I got the program going in it's listed form, I found that I could use it to print out the NRAP receiver or type-ahead buffer by making a few changes to the printer code.

First, I relocated the code to a blank 300 byte space in my Hunter board (D14035-14335), allowing a few extra bytes for the mods. Next, the source code has a data statement to identify the string to be printed: D63=Z, D13=$, so poke D38 for A as in A$, or D39 for the type-ahead, string B$.

The source code reads a D118, the NEWLINE code for carriage return as is normal; the NRAP puts CHAR 128 in the string to mark carriage returns, so the call to the ZX to ASCII is moved to the next byte after the 256 original bytes, and the following instructions added: CP 128 ; JZ -D26 ; C/R ; Call ZX to ASCII ; Back to normal.

The syntax would be a bit more elegant had I not ordered the EPROM version of the Berch assembler/disassembler, and had been able to just change the source code. The EPROM uses the same addresses, so it won't assemble on top of itself. That's the worst thing I can say about the A/D package, it's a beauty!

This little setup does a good job for me, but if you need hard copy in real time, a hardware port would have to be hooked up. Here is the rundown on the 'hard-copy' mode of NRAP. the info courtesy of NU4V:

"The NRAP printer routine loads the Sinclair character code of the character to be printed into the A register then a call is made to 0851H to send the character to the printer driver. The CALL 0851H begins at D16789. This sends a NEWLINE character to the printer driver when the stop command is sent. The other call is a CALL NZ, 0851H, which begins at D17132, to call the printer driver to print a character .... It might be possible to change these two addresses to get hard copy on your printer:

D16790 printer driver adr LSB now 51H
D16791 MSB now 08H
D17133 LSB now 51H
D17134 MSB now 08H"

I keep the NRAP, the printer software, ZXLR8, a space left in memory routine, a boot from D16515 to D8254 (where NRAP lives), in a well stuffed 8K Hunter board. This allows me to load the RTTY program in one second, be able to fill the 'canned messages' space with notes for the MSO's and when the mail is out; NEW;, and a RAND USR 8217 to start up again. I would like to get this package on EPROM, because the Hunter board could be better utilized now that I have a good working system. I can be reached on the WB4ZQB MSO on 7.0878 MHz, 74 baud RTTY. The access is MSOZQB. Good luck. Hope to be printing more Sinclair computers on RTTY. So far I have worked W2IVK, and VE3BRA was HEARD several times (now to get him to hear me!) The VIC 20/64 with the AIR 1 or CP 1 interfaces seem to be prevalent, but with a good keyboard, the NRAP keeps you looking like a pro. Having 'hard copy' is a nice bonus!

SuperBASIC
BASIC for the QL

Alex. F. Burr K5XY

SuperBASIC is the name Sinclair has given to the programing language which comes with the QL. It is more that just Microsoft BASIC with expansions and it has many significant differences from the BASIC used by the T/S 1500 or even the T/S 2068. First of all, single keystroke command entry has been eliminated in favor of a simplified keyboard. But this change is only the most noticable one.

Another very noticeable change is in th punctuation used. Many times when two words would logically be used in a command, an underscore is used to join these words, into a single word command, but with the appearance and readability of two words. For example, LINE is a graphics command which draws a line in absolute coordinates. To draw the line in relative coordinates, the command is LINE_R. Furthermore the examples make frequent use of this concept in the naming of variables as in READ test_data or PRINT error_count. This effect takes a little getting used to but seems like a good idea and should make for more readable programs.

The biggest change is a more fundamental one. BASIC was designed to be a simple, easy to learn language. As such, it had severe limitations. Since its beginning, expansions have tried to overcome its inflexibilities but at the expense of complications. Now the latest programing enthusiasm is for structured programing as exemplified by many PASCAL programs. Several new commands added to SuperBASIC permit many of the ideas of structured programming. In particular, subroutines and loops can be named and called by these names.

One of these new commands is DEFine PROCedure. (Note that these words are a combination of upper case and lower case. That is not an example of my bad typing. The whole word is the proper command and the upper case part is the acceptable abbreviation.) This command is really much like a subroutine. In fact, the manual recommends that GOSUB not be used; although for compatibility reasons the GOSUB command is available. The DEFine PROCedure is much more flexible. It can even pass parameters just as in FORTRAN. The main advantage of the new way of doing things is that the subroutines can be named so that their functions can be easily recognized. FOR loops are also named and ended with an END FOR statement. (NEXT is used to cause only part of a loop to repeat). A third new command is REPeat which does just that for a group of lines until some condition causes an EXIT.

All these new commands make SuperBASIC harder to learn. Fortunately you do not have to make use of these commands. The old, easy to learn ones are still there for the most part and can be used until the demands for flexibility force you to learn new methods.

SuperBASIC includes most of the functions, procedures, and constructs found in other dialects of BASIC. Many of these functions are superfluous in SuperBASIC but are included for compatibility reasons:

GOTO	use IF, REPeat, etc
GOSUB	use DEFine PROCedure
ON .. GOTO	use SELect
ON .. GOSUB	use SELect

Some BASIC commands are included in SuperBASIC and still have a genuine use:

READ	DATA
RESTORE	REMark
PEEK	POKE
LIST	NEW
RUN	STOP
CLEAR	

Some commands appear not to be present. They can always be obtained by using a more general function. For example, there are no LPRINT or LLIST statements in SuperBASIC but output can be directed to a printer by opening the relevant channel and using PRINT or LIST.

LPRINT	use PRINT #
LLIST	use LIST #
VAL	not required
STR$	not required
IN	not applicable to 68008
OUT	not applicable to 68008

All in all, there are 107 distinct commands or keywords as they are called. Actually, if variants of these keywords or closely related ones, are counted you get quite a few more than 107. The manual divides them up into 28 haphazard and confusing groups. If one tries for fewer and more independent groups, one can divide the keywords into the categories listed in the following table.

Category	Number of Keywords
Basic commands	26
INPUT/OUTPUT	22
Math functions	20
Window commands	14
Procedures	12
Graphic commands	9
Clock	4

In summary one can say that SuperBASIC is much more flexible and stucturable than the usual BASIC. Unfortunately (and inevitably) it will be harder to learn. The language is certainly sophisticated enough for serious programming.

Westridge 2050 Modem

Sam Geise KE3Y
RD 2 Box 48-B
Sunbury, PA 17801

As received with the simple ZX81/2068 (Smartmodem I) program it worked perfectly on the ZX81, T/S 1000, and the T/S 2068. Thus I ordered the Smartmodem II program as well as a modem for my son.

I received Smartmodem II but the extra 2050 modem was on back order. Unfortunately Smartmodem II failed to dial automatically. When listening to the dial clicks via a 98 cent telephone pick-up coil and amplifier, it sounded slightly mixed up. Since dialing was ok on the simple program (Smartmodem I), I of course attributed the problem to the Smartmodem II program.

Knighted Computers, 707 Highland St., Fulton, NY 13069 (Ed note: 2068 owners should send for their nice catalog if not done already) said the Smartmodem II tested OK but they would send another to make me happy. The extra modem still on back order came with the new Smartmodem II program. Smartmodem II and the new 2050 worked perfectly; but not with the old 2050. So the problem was the modem not the program. Knighted Computers cooperated beautifully and exchanged the old 2050. Now my son in the next town enjoys swapping messages and programs with his old man via Ma-Bell.

Incidentally, the Smartmodem II program instructions are totally inadequate. They do not even identify most of the strange subjects listed in the various menues. Fortunately, Knighted Computers came to the rescue and sent a thermofax with much information apparently received from some bulletin board. It is absolutely amazing what one can do with the T/S 2068 and the Westridge 2050 with Smartmodem II.

Editor's Doings - W4GHV

Well, you might have received your December issue in time for Christmas, but I bet the January issue got lost in the snow! I take full blame on this one. Having been lucky enough to be 'low bidder' on a minor consulting contract, I have been 'snowed', trying to get the design/construction project finished. It's one of those deals where you get paid AFTER it's working and delivered. The $$ is well needed in the Barry household but

the frustrations of getting parts and getting the circuit debugged has about convinced me to mow lawns or deliver papers for extra cash. The project is rather interesting and is now in use, but still awaiting my final debugging. Basically it is for the college music department allowing 8 turntable, etc inputs to my box which then enables up to 30 listening stations to listen to any one of the 8 inputs. Its all solid-state (no relays), controlled by an IBM PC and despite all the frustrations I am proud of it. (The wife will be proud when she sees the $$). I'm sorry QZX had to suffer along with my other hobbies. I have a thousand projects lined up for my Sanyo MBC-555 and they are in the hold mode until I get caught up. I even miss my trusty ZX-81 (being used by my students) and my TS-1500 (loaned to my daughter). It looks like the 2068 is seeing a lot of applications, and plenty of software, etc is still available but I havent't had the opportunity to buy or use one yet.

Here's the January issue a bit late, and the February issue should be received by you in about a week from now.

QZX FRIENDS

WA6DLI -- Robert sent us a fine color picture of his work space featuring his T/S 2068, color monitor, and printer beside a box which had held his Azden FM transceiver.

K7HSX -- Cliff says he has a ZX81, two T/S 1000's, and a T/S 2068. The first ZX81 cost hin $149 and the last T/S 1000 only $15.

WA2NDJ -- S. R. says he is operating with one of everything. He has a ZX81, a T/S 1000 and a T/S 2068. He has two T/S 2040 printers.

N1AQX -- Bill says he has a ZX81 and a T/S 1000 with a home brew big keyboard. He uses NU4V's CWSS program and as soon as he can build his NRTU RTTY TU he will be on the air in RTTY.

V*7NAC -- Fred (Nachbaur), the originator of Syncware News, has moved to Canada. He writes to say that he has a ZX81, two T/S 1000's, a T/S 1500, a T/S 2068, two T/S 2040's, four monitors, a Gemini 10, and a Prowriter printer as well as miscellaneous stuff. (Ha). He comments on how much is crammed into 12 pages here and says that he has improved a good word-processing program. (see unclassifieds).

W8NFQ -- Ed writes to say that he has greatly improved his field day logging program (July QZX, sold out) with more machine language routines. The dup search through 600 calls now takes less than a second and the print out which used to take 2 1/2 hours now takes only 6 minutes. (That is some speed-up). He says the T/S compters are still most ideal for field day because of the low power requirements and low cost printers.

W9LCO -- Jay has a ZX 81, a T/S 1000, a T/S 2068, and a T/S 2040. He too is interested in RTTY for the 2068. (see ad by SM3HBQ).

SM3HBQ -- Hans is very interested in forming an international T/S net using Oscar 10. If anybody here is interested you can write to him at the address given in the unclassified ads.

N0AQO -- Jim was one of several who sent us Christmas cards. We appreciate them all.

KD7EC -- Hal has been redoing his T/S 1000 by adding a keyboard and mounting the whole thing in a Radio Shack cabinet.

WB8MKH -- Don says that he has a ZX81 with full size keyboard on RTTY and is having a good time with the AF8J RTTY program. He has a home brew tuning unit fron the Dec 81 QST. He modified that program to have a recieve buffer of approximately 13K to receive RTTY art from N8ERI. After recieving the picture data, he uses the transmit mode to drive a model 15 TTY for the print out. He says it seems to work quite well, just a little slow.

W*6STE -- Don says he has completed the PCB project for copying CW on his T/S 1000 and is working on the RTTY board now He has organized a Bakersfile Timex Sinclair group with about 40 members.

KD5DL -- Holly is back in the US now. He saw lots of ZX81 for sale almost everywhere in New Zealand.

KA2LHO -- Kraig has sent us another program and has said that he is busy using his new modem which he got for $50 at a hamfest. I know he has checked into our bulletin board.

UNCLASSIFIED ADS

WANTED: UNCLASSIFIED ADS for publication in QZX. Cost is 1 cent for each keystroke (characters, blanks, etc.). Payment must be included with order. This is an excellent way to sell your program or unwanted equipment, ask for help, or find a specific program. Send your ad with payment to QZX, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE: ZX81/TS1000 edgeboard wire-wrap connectors; keyed; bifurcated contacts; manufactured by TI; $5.00 each. Pc piggy-back extender boards; $1.50 each. Economical experimenting with Radio-Shack's 276-158 and 161 project boards and these connectors. Add $0.75 shipping per order. Paul Hunter, 1630 Forest Hills Drive, Okemos, MI 48864.

FOR SALE: IMPROVED Chebyshev/ Butterworth filter design program. Listing $1, cassette $5. C. Milazzo, USNS Box 3007, FPO Miami FL 34051.

FOR SALE: MLI gives CWSS new life! Enter the program and view buffers using the speed of machine language. CWSS/MLI loads quicker because it's shorter by over 30%. Don't transmit your typos, delete them with MLI! I'm working on auto Tx/Rx and Rx screen dump to printer. Send me your suggestions on how you would like these to work. Most of all send your $7.50 for MLI! John McGinley N9BBN/203 Milwaukee St./Mauston, WI 53948.

FOR SALE: KA2LHO HAM HELPER SERIES-13 ham radio programs from Novice Exams to electronics to County Hunting to antenna design, All written in easy to modify BASIC for the ZX-81, TS 1000, TS 1500, and TS 2068. This is one of the few complete lines of ham software available for the 2068. For complete listing including 4 additional non-ham

(CONTD - PG. 11)

NOTES ON "DXCLOCK"

by GUILLERMO GARCIA (LU8MAD)

THE DXCLOCK IS OTHER PROGRAM DESIGNED TO PUT THE TIMEX/SINCLAIR FAMILY OF COMPUTERS TO WORK IN THE HAM SHACK.

DXCLOCK IS HERE ABAILABLE IN SPANISH AND ENGLISH TRANSLATION

THE PROGRAM IS SELF;STARTING AND MENU DRIVEN. IT REQUIRES LESS THAN 14Kb AND SHOULD PRESENT NO PROBLEMS FOR THE OPERATOR.

DATA NEEDED IS REAL-TIME (IN YOUR QTH).

DX TIME WILL BE DISPLAYED ON MAP OF THE WORLD WITH APPOINTMENT CITY CHOICE TOGETHER LOCAL TIME

YOUR NEED HAVE THE TIME TO TYPE IN THIS LARGER PROGRAM,BUT IT WORK FINE .

MY PRINTER NOT COPY SINCLAIR GRAPHICS SYMBOLS AND INVERSE CHARACTERS, AS SON AS, THE INVERSE CHARACTERS IN MAIN MENU THEY ARE INDICATED IN PRINTOUT LISTING AS LOWER CASE CHARACTER

CONSTRUCTION MAP OF THE WORLD FOR CITIES LOCATION IS DONE BY USING THE GRAPHICS SYMBOLS (IN PROGRAM LISTING INDICATED SUCH AS CHARACTER CODE OF THE GRAPHICS SYMBOLS) IT IS FOUND IN LINES 2120 THROUGH 2160 . NUMBER OF REPETITION THOSE SET BETWEEN PARENTHESIS.

THE SOFT CLOCK SUBROUTINE (LINES 4200-4978) IS IMPROVEMENT OF DONNELLY III SOFTWARE CLOCK ISSUED IN SYNTAX MAR.83. JUST MAKE SURE YOU GOTO 4200 (OR PRESSING "L") AT LEAST EVERY FIVE MINUTES.

IMPORTANT:

CHANGE THE "03" IN LINE 406 BY DIFFERENCE BETWEEN YOUR TIME ZONE AND UTC (ZULU TIME).

TRANSLATION:

TO TRASLATE THE ESPANISH TO ENGLISH CHANGE THE TEXT IN LINE 130, 400, 410, 460, 480, 482, 519, 570, 770, 4399, 4920,4961 AND 4971 BY THE FOLLOWING:

LINE 130-"ENTER YOUR CHOICE"
LINE 400-"ENTER QTR FOR YOUR QTH";TAB 8;"< AS HH:MM>"

LINE 410-"PRESS"M"TO RETURN TO MENU"

LINE 460-"PRINT AT 4,11;"CAPE TOWN";TAB 11;"LUANDA"..ETC"

LINE 480-"TO SEE TIME OF SELECTED CITY"

LINE 482-"PRESS INVERSE LETTERS AND ENTER"

LINE 519-"PE"

LINE 570-"PRESS"L"TO SEE CLOCK"

LINE 770-"CAPE TOWN"

LINE 4399-"TO RETURN TO MAIN MENU PRESS "D" BY SOME SECONDS"

LINE 4920-"SET TIME (S) OR START AT 0 (Z)"

LINE 4961-"ENTER TIME AS HH:MM:SS"

LINE 4971-"IS THIS RIGHT?"

INSTRUCTION FOR "DXCLOCK"

THE FIRST SCREEN[1] GIVES A MENU FOR:

LOCAL TIME

DX TIME

IF LETTER "L"WAS SELECTED THEN TWO PARAMETERS CAN BE SELECTED SUCH AS:

(S) SET TIME

(Z) START AT 0

THE RESULTS WILL BE DISPLAYED AS SHOWN IN THE SAMPLE PRINTOUT

ALL DATA IMPUTED WILL BE AS FOLLOWS:

HOURS (HH)

MINUTES (MM)

SECONDS (SS)

BY PRESSING "M" GO TO MAIN MENU WILL BE DISPLAYED, AND A MENU OF OPTIONS WILL SOON APPEAR ON THE SCREEN.

YOUR CHOICES INCLUDE 48 CITIES OF THE WORLD, AND YOU SEE THE TIME IN THEY.

SEE SAMPLE PRINTOUT.[2]

FOR MORE INFORMATION SEND A S.A.E. (AND SUFFICIENT IRCs) TO THE FOLLOWING ADDRESS:G.GARCIA, Cabildo 584, (5521) GUAYMALLEN, MENDOZA, ARGENTINA. 73s.

(1)

"DXCLOCK"

1OCAL TIME (HORA LOCAL)

dX TIME

DIGITE SU ELECCION

(2)

DX CLOCK

faIRBANKS	clcABO	CAMBERrA
s.fRISCO.	luANDA	oaLO
deNVER	teNERIFE	hoNOLULU
daLLAS	el CAIRO	phOM PENH
n.yORK	JaRUSALEN	seUL
moNTREAL	amKARA	maNILLA
vaNCOUVER	aLENAS	weLLINGTON
meXICO	roMA	toKIO
caRACAS	PaRIS	BEijIMG
haBANA	maDRID	veRJOIANSK
boGOTA	liSBOA	heLSINKI
liMA	loNDRES	odESA
quITO	boNN	prAGA
saNTIAGO	EsTOKOLMO	buCAREST
bs.AIRES	kaRACHI	beRNA
bmASILIA	MOSCu	BELGRADO

PARA VER HORA DE CIUDAD ELEGIDA
DIGITE LETRAS INDICADAS Y enter

(3)

PARA IR AL menu PRINCIPAL MANTENGA PRESIONADO LO NECESARIO LA TECLA DE LA LETRA "D"

12:24:49

DX-CLOCK by Guillermo Garcia, LU8MAD

Here's a rather interesting program, submitted by LU8MAD, who requested I correct the English! I guarantee you his English is better than my Spanish. Rushed for time and fearful I may change things for the worse, I am printing it as is. I feel readers will not have trouble making the few minor corrections.. Editor.

```
 10~REM
 100 PRINT AT 3,10;"""DXCLOCK"""
 110 PRINT AT 10,2;"lOCAL TIME (
HORA LOCAL)"
 120 PRINT AT 14,2;"dX TIME "
 130 PRINT AT 21,5;"DIGITE SU EL
ECCION"
 140 LET B$=INKEY$
 150 IF B$="" THEN GOTO 140
 160 IF B$="L" THEN GOTO 4000
 170 IF B$="D" THEN GOTO 390
 390~CLS
 400 PRINT AT 3,5;"ENTRE qtr DE
SU QTH";TAB 8;"(COMO HH:MM)"
 401 INPUT T$
 402 IF LEN T$<>5 THEN GOTO 401
 403 LET HH=VAL T$(1 TO 2)
 404 LET MM=VAL T$(4 TO 5)
 405 PRINT AT 6,7;"QTR LOCAL= ";
HH;":";MM
 406 LET HZ=HH+03
 407 GOSUB 3000
 408 PRINT AT 8,7;"QTR ""UTC""=
";HZ;":";MM
 410 PRINT AT 21,0;"PRESIONE ""M
"" PARA IR A menu"
 412 LET M$=INKEY$
 414 IF M$="M" THEN GOTO 420
 415 IF M$="L" THEN GOTO 4190
 416 IF M$<>"M" OR M$<>"L" THEN
GOTO 410
 420~CLS
 440 PRINT AT 0,10;" 0;(10)3;132
 ; "TAB 10;"5;0;DX CLOCK;0;133";
  TAB 10;"130;(10)3;129"
 450 PRINT AT 4,0;"faIRBANKS",,"
s.fRISCO.",,"deNVER",,"daLLAS",,
"n.wORK",,"maNTREAL",,"vaNCOUVER
",,"meXICO",,"caRACAS",,"haBANA"
,,"baGOTA",,"liMA",,"quITO",,"sa
NTIAGO",,"b$.AIRES",,"brASILIA"
 460 PRINT AT 4,11;"c.cABO";TAB
11;"luANDA";TAB 11;"teNERIFE";TA
B 11;"el CAIRO";TAB 11;"JeRUSALE
N";TAB 11;"amKARA";TAB 11;"atENA
S";TAB 11;"roMA";TAB 11;"PaRIS";
TAB 11;"maDRID";TAB 11;"lISBOA";
TAB 11;"loNDRES";TAB 11;"boNN";T
AB 11;"EstOKOLMO";TAB 11;"kaRACH
I";TAB 11;"moSCU"
 470~PRINT AT 4,22;"CAMBErrA";TA
B 22;"osLO";TAB 22;"hgNOLULU";TA
B 22;"PhOM PENH";TAB 22;"seUL";T
AB 22;"maNILLA";TAB 22;"weLLINGT
ON";TAB 22;"toKIO";TAB 22;"BEijI
NG";TAB 22;"veRJOIANSK";TAB 22;"
heLSINKI";TAB 22;"odESA";TAB 22;
"PrAGA";TAB 22;"buCAREST";TAB 22
;"beRNA";TAB 22;"BELgrADO"
 480 PRINT AT 20,0;"PARA VER HOR
A DE CIUDAD ELEGIDA"
 482 PRINT AT 21,0;"DIGITE LETRA
S INDICADAS Y enter"
 500 INPUT P$
 501 IF P$="" THEN GOTO 500
 502 IF P$="FA" THEN GOTO 600
 503~IF P$="SF" THEN GOTO 610
 504 IF P$="DE" THEN GOTO 620
 505 IF P$="DA" THEN GOTO 630
 506 IF P$="NY" THEN GOTO 640
 507 IF P$="HO" THEN GOTO 650
 508 IF P$="MO" THEN GOTO 660
 509 IF P$="VA" THEN GOTO 670
 510 IF P$="ME" THEN GOTO 680
 511 IF P$="CA" THEN GOTO 690
 512 IF P$="HA" THEN GOTO 700
 513 IF P$="BO" THEN GOTO 710
 514 IF P$="LI" THEN GOTO 720
 515 IF P$="QU" THEN GOTO 730
 516 IF P$="SA" THEN GOTO 740
 517 IF P$="BS" THEN GOTO 750
 518 IF P$="BR" THEN GOTO 760
 519 IF P$="CC" THEN GOTO 770
 520 IF P$="LU" THEN GOTO 780
 521 IF P$="TE" THEN GOTO 790
 522 IF P$="EL" THEN GOTO 800
 523~IF P$="JE" THEN GOTO 810
 524 IF P$="AM" THEN GOTO 820
 525 IF P$="AT" THEN GOTO 830
 526 IF P$="RO" THEN GOTO 840
 527 IF P$="PA" THEN GOTO 850
 528 IF P$="MA" THEN GOTO 860
 529 IF P$="IS" THEN GOTO 870
 530 IF P$="LO" THEN GOTO 880
 531 IF P$="BO" THEN GOTO 890
 532 IF P$="ST" THEN GOTO 900
 533 IF P$="KA" THEN GOTO 910
 534 IF P$="CU" THEN GOTO 920
 535 IF P$="OS" THEN GOTO 930
 536 IF P$="HE" THEN GOTO 940
 537 IF P$="VE" THEN GOTO 950
 538 IF P$="OD" THEN GOTO 960
 539 IF P$="PR" THEN GOTO 970
 540 IF P$="BU" THEN GOTO 980
 541 IF P$="BE" THEN GOTO 990
 542 IF P$="GR" THEN GOTO 1000
 543~IF P$="PH" THEN GOTO 1010
 544 IF P$="SE" THEN GOTO 1020
 545 IF P$="NI" THEN GOTO 1030
 546 IF P$="WE" THEN GOTO 1040
 547 IF P$="TO" THEN GOTO 1050
 548 IF P$="IJ" THEN GOTO 1060
 549 IF P$="RR" THEN GOTO 1070
 550 IF P$="BE" THEN GOTO 1080
 560 STOP
 570 PRINT AT 21,0;"PRESIONE ""L
"" PARA VER reloj"
 580 FOR B=1 TO 30
 582 GOTO 586
 584 GOTO 570
 586 PRINT AT X,Y;" ";AT X,Y;"*"
 588 NEXT B
 589 RETURN
 590 FOR N=0 TO (LEN A$+1)
 591 GOSUB 2169
 592 PRINT AT 17,(14+N);"131"
 593~PRINT AT 18,14;"5";A$;"133"
 594 PRINT AT 19,14;"5";AT 19,14
+(LEN A$+1);"133"
 595 PRINT AT 19,14+INT (((LEN A
$+2)-5)/2);HX;":";MM
 596 PRINT AT 20,(14+N);"3"
 597 NEXT N
 598 SLOW
 599 RETURN
 600 LET A$="FAIRBANKS"
 601 LET HX=HZ-10
 602 GOSUB 2100
 603 LET X=4
 604 LET Y=2
 605 GOSUB 2000
 606 GOSUB 590
 607 GOSUB 584
 608 GOTO 410
 610 LET A$="S.FRISCO."
 611 LET HX=HZ-8
 612~GOSUB 2100
 613 LET X=8
 614 LET Y=4
 615 GOSUB 2000
 616 GOSUB 590
 617 GOSUB 584
 618 GOTO 410
 620 LET A$="DENVER"
 621 LET HX=HZ-7
 622 GOSUB 2100
 623 LET X=8
 624 LET Y=5
 625 GOSUB 2000
 626 GOSUB 590
 627 GOSUB 584
 628 GOTO 410
 630 LET A$="DALLAS"
 631 GOSUB 2100
 632 LET HX=HZ-6
 633 GOSUB 2000
 634~LET X=8
 635 LET Y=6
 636 GOSUB 2000
 637 GOSUB 590
 638 GOSUB 584
 639 GOTO 410
 640 LET A$="N.YORK"
 641 LET HX=HZ-5
 642 GOSUB 2100
 643 LET X=8
 644 LET Y=9
 645 GOSUB 2000
 646 GOSUB 590
 648 GOSUB 584
 649 GOTO 410
 650 LET A$="HONOLULU"
 651 GOSUB 2100
 652 LET HX=HZ-10
 653 LET X=10
 655 LET Y=0
 656~GOSUB 2000
 657 GOSUB 590
 658 GOSUB 584
 659 GOTO 410
 660 LET A$="MONTREAL"
 661 LET HX=HZ-5
 662 GOSUB 2100
 664 LET X=7
 665 LET Y=9
 666 GOSUB 2000
 667 GOSUB 590
 668 GOSUB 584
 669 GOTO 410
 670 LET A$="VANCOUVER"
 671 LET HX=HZ-8
 672 GOSUB 2100
 673 LET X=6
 674 LET Y=3
 675 GOSUB 2000
 676 GOSUB 590
 677~GOSUB 584
 679 GOTO 410
 680 LET A$="MEXICO"
 681 LET HX=HZ-6
 682 GOSUB 2100
 683 LET X=9
 684 LET Y=6
 685 GOSUB 2000
 686 GOSUB 590
 687 GOSUB 584
 688 GOTO 410
 690 LET A$="CARACAS"
 691 LET HX=HZ-4
 692 GOSUB 2100
 693 LET X=11
 694 LET X=11
 695 LET Y=9
 696 GOSUB 2000
 697 GOSUB 584
 698 GOTO 410
 700~LET A$="HABANA"
 701 LET HX=HZ-5
 702 GOSUB 2100
 703 GOSUB 590
 704 LET X=10
 705 LET Y=9
 706 GOSUB 2000
 707 GOSUB 584
 708 GOTO 410
 710 LET A$="BOGOTA"
 711 LET HX=HZ-5
 712 GOSUB 2100
 713 LET X=12
 714 LET Y=9
 715 GOSUB 2000
 716 GOSUB 590
 717 GOSUB 584
 718 GOTO 410
 720 LET A$="LIMA "
 721 LET HX=HZ-5
 722~GOSUB 2100
 723 LET X=14
 724 LET Y=8
 725 GOSUB 2000
 726 GOSUB 590
 727 GOSUB 584
 728 GOTO 410
```

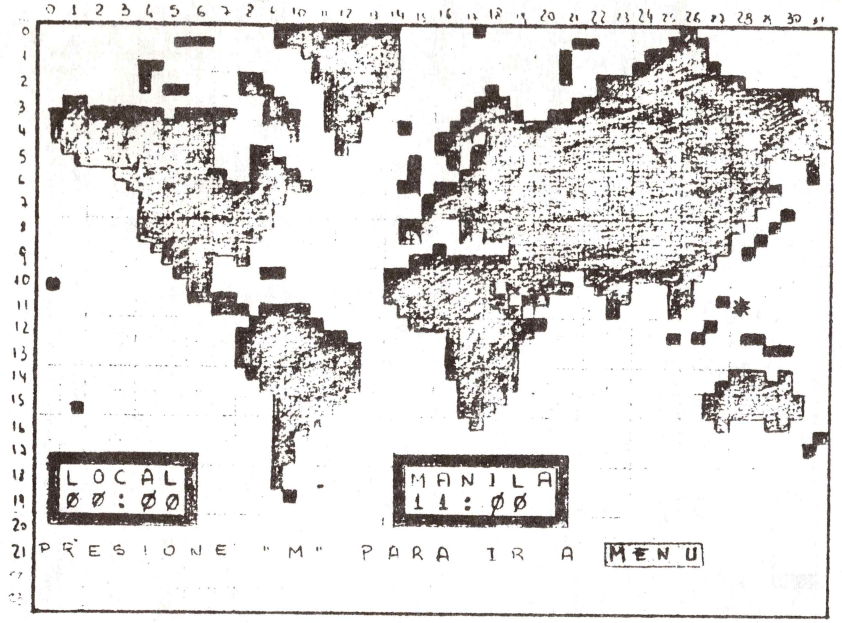
```
730 LET A$="QUITO"
731 LET HX=HZ-5
732 GOSUB 2100
733 LET X=13
734 LET Y=8
735 GOSUB 2000
736 GOSUB 590
737 GOSUB 584
738 GOTO 410
740 LET A$="SANTIAGO"
741 LET HX=HZ-4
742 GOSUB 2100
743 LET X=16
744~LET Y=9
745 GOSUB 2000
746 GOSUB 590
747 GOSUB 584
748 GOTO 410
750 LET A$="B.AIRES"
751 LET HX=HZ-3
752 GOSUB 2100
753 LET X=16
754 LET Y=11
755 GOSUB 2000
756 GOSUB 590
757 GOSUB 584
758 GOTO 410
760 LET A$="BRASILEA"
761 LET HX=HZ-3
762 GOSUB 2100
763 LET X=13
764 LET Y=10
765 GOSUB 2000
766~GOSUB 590
767 GOSUB 584
768 GOTO 410
770 LET A$="C.CABO"
771 LET HX=HZ+2
772 GOSUB 2100
773 LET X=16
774 LET Y=17
775 GOSUB 2000
776 GOSUB 590
777 GOSUB 584
778 GOTO 410
780 LET A$="LUANDA"
781 LET HX=HZ+1
782 GOSUB 2100
783 LET X=13
784 LET Y=16
785 GOSUB 2000
786 GOSUB 590
787 GOSUB 584
788~GOTO 410
790 LET A$="TENERIFE"
791 LET HX=HZ
792 GOSUB 2100
793 LET X=10
794 LET Y=14
795 GOSUB 2000
796 GOSUB 590
797 GOSUB 584
798 GOTO 410
```

```
800 LET A$="EL CAIRO"
801 LET HX=HZ+2
802 GOSUB 2100
803 LET X=9
804 LET Y=17
805 GOSUB 2000
806 GOSUB 590
807 GOSUB 584
808 GOTO 410
810 LET A$="JERUSALEN"
811~LET HX=HZ+2
812 GOSUB 2100
813 LET X=9
814 LET Y=18
815 GOSUB 2000
816 GOSUB 590
817 GOSUB 584
818 GOTO 410
820 LET A$="AMKARA"
821 LET HX=HZ+3
822 GOSUB 2100
823 LET X=9
824 LET Y=19
825 GOSUB 2000
826 GOSUB 590
827 GOSUB 584
828 GOTO 410
830 LET A$="ATENAS"
831 LET HX=HZ+2
832 GOSUB 2100
833~LET X=8
834 LET Y=18
835 GOSUB 2000
836 GOSUB 590
837 GOSUB 584
838 GOTO 410
840 LET A$="ROMA"
841 LET HX=HZ+1
842 GOSUB 2100
843 LET X=8
844 LET Y=17
845 GOSUB 2000
846 GOSUB 590
847 GOSUB 584
848 GOTO 410
850 LET A$="PARIS"
851 LET HX=HZ+1
852 GOSUB 2000
853 LET X=7
854 LET Y=15
855~GOSUB 2000
856 GOSUB 590
857 GOSUB 584
858 GOTO 410
860 LET A$="MADRID"
861 LET HX=HZ+1
862 GOSUB 2100
863 LET X=8
864 LET Y=15
865 GOSUB 2000
866 GOSUB 590
867 GOSUB 584
868 GOTO 410
```

```
870 LET A$="LISBOA"
871 LET HX=HZ
872 GOSUB 2100
873 LET X=8
874 LET Y=14
875 GOSUB 2000
876 GOSUB 590
877~GOSUB 584
878 GOTO 410
880 LET A$="LONDRES"
881 LET HX=HZ
882 GOSUB 2100
883 LET X=6
884 LET Y=15
885 GOSUB 2000
886 GOSUB 590
887 GOSUB 584
888 GOTO 410
890 LET A$="BONN"
891 LET HX=HZ+1
892 GOSUB 2100
893 LET X=6
894 LET Y=17
895 GOSUB 2000
896 GOSUB 590
897 GOSUB 584
898 GOTO 410
900~LET A$="ESTOKOLMO"
901 LET HX=HZ+1
902 GOSUB 2100
903 LET X=5
904 LET Y=16
905 GOSUB 2000
906 GOSUB 590
907 GOSUB 584
908 GOTO 410
910 LET A$="KARACHI"
911 LET HX=HZ+5
912 GOSUB 2100
913 LET X=10
914 LET Y=22
915 GOSUB 2000
916 GOSUB 590
917 GOSUB 584
918 GOTO 410
920 LET A$="MOSCU"
921 LET HX=HZ+3
922~GOSUB 2100
923 LET X=5
924 LET Y=19
925 GOSUB 2000
926 GOSUB 935
927 GOSUB 584
928 GOTO 410
930 LET A$="OSLO "
931 LET HX=HZ+1
932 GOSUB 2100
933 LET X=5
934 LET Y=16
935 GOSUB 2000
936 GOSUB 590
937 GOSUB 584
938 GOTO 410
940 LET A$="HELSINKI"
```

```
941 LET HX=HZ+2
942 GOSUB 2100
943 LET X=4
944~LET Y=18
945 GOSUB 2000
946 GOSUB 590
947 GOSUB 584
948 GOTO 410
950 LET A$="VERJOIANSK"
951 LET HX=HZ+10
952 GOSUB 2100
953 LET X=3
954 LET Y=29
955 GOSUB 2000
956 GOSUB 590
957 GOSUB 584
958 GOTO 410
960 LET A$="ODESA"
961 LET HX=HZ+3
962 GOSUB 2100
963 LET X=8
964 LET Y=19
965 GOSUB 2000
966~GOSUB 590
967 GOSUB 584
968 GOTO 410
970 LET A$="PRAGA"
971 LET HX=HZ+1
972 GOSUB 2100
973 LET X=7
974 LET Y=18
975 GOSUB 2000
976 GOSUB 590
977 GOSUB 584
979 GOTO 410
980 LET A$="BUCAREST"
981 LET HX=HZ+2
982 GOSUB 2100
983 LET X=8
984 LET Y=18
985 GOSUB 2000
986 GOSUB 590
987 GOSUB 584
988~GOTO 410
990 LET A$="BERNA"
991 LET HX=HZ+1
992 GOSUB 2100
993 LET X=7
994 LET Y=17
995 GOSUB 2000
996 GOSUB 590
997 GOSUB 584
998 GOTO 410
1000 LET A$="BELGRADO"
1001 LET HX=HZ+1
1002 GOSUB 2100
1003 LET X=8
1004 LET Y=17
1005 GOSUB 2000
1006 GOSUB 590
1007 GOSUB 584
1008 GOTO 410
1010 LET A$="PHOM PENH"
1011~LET HX=HZ+7
```

```
1012 GOSUB 2100
1013 LET X=11
1014 LET Y=26
1015 GOSUB 2000
1016 GOSUB 590
1017 GOSUB 584
1018 GOTO 410
1020 LET A$="SEOUL"
1021 LET HX=HZ+9
1022 GOSUB 2100
1023 LET X=8
1024 LET Y=28
1025 GOSUB 2000
1026 GOSUB 590
1027 GOSUB 584
1028 GOTO 410
1030 LET A$="MANILA"
1031 LET HX=HZ+8
1032 GOSUB 2100
1033~LET X=11
1034 LET Y=27
1035 GOSUB 2000
1036 GOSUB 590
1037 GOSUB 584
1038 GOTO 410
1040 LET A$="WELLINGTON"
1041 LET HX=HZ+12
1042 GOSUB 2100
1043 LET X=16
1044 LET Y=31
1045 GOSUB 2000
1046 GOSUB 590
1047 GOSUB 584
1048 GOTO 410
1050 LET A$="TOKIO"
1051 LET HX=HZ+9
1052 GOSUB 2100
1053 LET X=8
1054 LET Y=29
1055~GOSUB 2000
1056 GOSUB 590
1057 GOSUB 584
1058 GOTO 410
1060 LET A$="BEIJING"
1061 LET HX=HZ+8
1062 GOSUB 2100
1063 LET X=7
1064 LET Y=27
1065 GOSUB 2000
1066 GOSUB 590
1067 GOSUB 584
1068 GOTO 410
1070 LET A$="CAMBERRA"
1071 LET HX=HZ+10
1072 GOSUB 2100
1073 LET X=16
1074 LET Y=30
1075 GOSUB 2000
1076 GOSUB 590
1077~GOSUB 584
1078 GOTO 410
1980 STOP
2000 IF HX>24 THEN LET HX=HX-24
2010 IF HX<1 THEN LET HX=HX+24
2020 RETURN
2100 CLS
2105 FAST
2110 PRINT AT Ø,Ø;"(5)Ø;135;131
;(2)Ø;133;(4)128;5";TAB 4;"131;
(5)Ø;2;(3)128;5";TAB 4;"5;131;
(2)Ø;128;4;Ø;132;(2)128;5";TAB
Ø;"135;128;(3)131;135:(2)131;Ø
;128;4";TAB Ø;"133;(6)128;1;Ø;
3;5;2;128"
2120 PRINT AT 5,1;"132;(5)128;
Ø;133;130;(2)Ø;1";TAB 3;132;(3)
128;130;129;128;130";TAB 4;"(5)
128;7";TAB 4;"(5)128;1";TAB 4;
"2;(2)128;3;5";TAB 5;"2;128;(2)
Ø;3"
2130 PRINT AT 11,6;"3,126;4;(2)
131";TAB 8;"129;(2)128;130;4";
TAB 8;"(5)128";TAB 8;"2;(4)128;
1";TAB 9;"133;(2)128;1";TAB 9;
"133;128;1";TAB 9;"133;5";TAB 9
;"133;Ø;27";TAB 10;"1"
2135 PRINT AT 10,Ø;"135";AT 15,
1;"135"
2140 PRINT AT Ø,17;"2;(3)Ø;135;
4;(2)Ø;135;130";TAB 21;"5:(2)Ø;
129;(2)128;4";TAB 18:"4;(2)Ø;1;
133;(5)128;130;(2)131;4";TAB 17
;129;128;4;135;129;(10)128";TAB
14;"2;Ø;129;7;(14)128";TAB 15;"
4:132;133;(11)128;130;128;1"
2150 PRINT AT 7,15;"133;(13)128
;1:4";TAB 14:"133;7;Ø;7;(10)128
:1:6";TAB 15;"131;130:(2)131;(8
)128:7:2";TAB 14;"(4)128;7;(2)
128:4;132;128;3:132:7";TAB 14;
132;(4)128;6;1;(2)Ø;7;Ø;133;1;2
";TAB 15;"3;132;(3)128;1";TAB
25;"(2)135;1;135;4";TAB 16;"133
:(2)128;5";TAB 29;"2;1";TAB 16;
"2:(2)128:5;4";TAB 27;"135;128;
130:5";TAB 17;"128;7;Ø:1";TAB
2160 PRINT AT 15,27;"(4)128";TA
B 17: "2";TAB 27;"2;Ø:2;1;135";
TAB 31;"1"
2162 SLOW
2165 RETURN
2169 FAST
2170 PRINT AT 17,Ø:"(7)131";TAB
Ø;"5;49;52;40;38;49;133";TAB Ø;
"5";HH;TAB 3;"14";MM;TAB 6;"133
";TAB Ø:"(7)131"
2190 RETURN
3000 IF HZ>24 THEN LET HZ=HZ-24
3010 IF HZ<1 THEN LET HZ=HZ+24
3020 RETURN
3100 STOP
4000 CLS
4006~CLEAR
4007 LET F=1.605
4008 LET OV=32768
4009 GOTO 4900
4100 LET C=PEEK 16436+256*PEEK 1
6437
4105 RETURN
4190 CLS
4200 GOSUB 4100
4205 GOSUB 4100
4210 LET NV=C
4211 IF OV<NV THEN GOTO 4215
4212 GOTO 4220
4213 REM
4215 IF OV>NV-256 THEN GOTO 4200
4220 IF OV<NV THEN LET OV=OV+327
68
4230 LET PINC=ABS ((OV-NV)+F)
4240 LET OV=NV
4250 LET SS=SS+PINC/60
4260~LET MINC=0
4270 IF SS>=60 THEN LET MINC=INT
(SS/60)
4280 LET SS=SS-MINC*60
4290 LET MM=MM+MINC
4300 LET HC=0
4310 IF MM>=60 THEN LET HC=INT (
MM/60)
4320 LET MM=MM-HC*60
4330 LET HH=HH+HC
4332 IF HH<24 AND HH>10 OR MM>10
 AND SS>10 THEN GOTO 4396
4340 IF HH>24 THEN LET HH=HH-24
4370 IF HH<10 THEN LET H$="0"
4372 IF MM<10 THEN LET M$="0"
4374 IF SS<10 THEN LET Z$="0"
4390 LET SS1=INT SS
4391 PRINT AT 21,10;"          "
4392 PRINT AT 21,10;H$+STR$ HH+"
:"+M$+STR$ MM+":"+Z$+STR$ SS1
4394~GOTO 4400
4396 LET SS1=INT SS
4397 PRINT AT 21,10;"          "
4398 PRINT AT 21,10;STR$ HH+":"+
STR$ MM+":"+STR$ SS1
4399 PRINT AT 5,0;"PARA IR AL  m
enu PRINCIPAL       MANTENGA PRES
IONADO LO NE-       CESARIO  LA
TECLA  DE  LA       LETRA ""D"""
4400 IF INKEY$="D" THEN GOTO 440
7
4405 GOTO 4410
4407 CLS
4408 GOTO 405
4410 GOSUB 4600
4499 GOTO 4200
4600 LET H$=""
4602 LET M$=""
4604 LET Z$=""
4607~RETURN
4900 PRINT AT 2,10;" SOFT CLOCK
  "
4905 PRINT "",,,,
4920 PRINT "PONER HORA (S) O PAR
TIR DE Ø (Z)"
4930 INPUT S$
4935 CLS
4940 IF S$="Z" THEN GOTO 4950
4942 IF S$="S" THEN GOTO 4960
4944 GOTO 4930
4950 LET SS=-4
4952 LET MM=0
4954 LET HH=0
4956 PAUSE 0
4958 GOTO 4200
4960 CLS
4961 PRINT "ENTRE HORA COMO HH:M
M:SS"
4962 LET PINC=0
4963~INPUT T$
4965 IF LEN T$<>8 THEN GOTO 4963
4966 LET MINC=0
4967 LET HH=VAL T$(1 TO 2)
4968 LET MM=VAL T$(4 TO 5)
4969 LET SS=VAL T$(7 TO 8)
4971 PRINT "ESTA CORRECTO? ";HH;
":";MM;":";SS
4973 INPUT S$
4974 PAUSE 0
4975 CLS
4976 IF S$="Y" THEN GOTO 4200
4978 GOTO 4961
4980 STOP
8000 REM  BY  G.GARCIA RAYO
          (C)  1984
8001 REM     ( LU 8 MAD )
9010 CLS
9020 SAVE "DXCLOCk"
9030 GOTO 100
```



*** KA2LHO HAM HELPER SERIES ***

BY

KRAIG D. PRITTS
KA2LHO

-20 10-10 FILE-N-SORT (16/64K)

LOAD 10-10, UPON LOADING THE PROGRAM WILL SELF-START AND A TITLE SCREEN WILL APPEAR, AFTER A SHORT PAUSE, YOU WILL BE SHOWN THE MAIN MENU, THIS IS THE POINT FROM WHICH YOU WILL MOVE TO AND RETURN FROM ANY SECTION OF THIS PROGRAM. *NOTE: IF YOU HAVE NOT PREVIOUSLY SELECTED OPTION 1 ON THE MENU THERE WILL BE NO OPEN FILES DISPLAYED*

YOUR INITIAL CHOICE SHOULD BE 1 SINCE IT IS NECESSARY TO SET UP THE PROGRAM FOR YOUR RAM SET-UP. (RAM IS AUTOMATICALLY SET ON THE TS 2068 VERSIONS,) AT PRESENT THE PROGRAM IS SET TO KEEP TRACK OF 200 NUMBERS FOR ALL SYSTEMS. THIS IS EASILY CHANGED VIA THE DIRECTIONS GIVEN LATER. AFTER INITIALIZATION IS COMPLETE YOU WILL BE RETURNED TO THE MENU (WHICH WILL DISPLAY THE OPEN FILES NUMBER) TO CONTINUE.

ENTRY (2) ALLOWS ENTRY OF 10-10 NUMBERS FOR STORAGE, IF YOU ATTEMPT TO USE THIS BEFORE FILE INITIALIZATION (1), YOU WILL GET A FILE FULL MESSAGE AND RETURNED TO THE MENU.

SEARCH (3) ALLOWS YOU TO CONDUCT A SEARCH FOR A PARTICULAR NUMBER. AFTER THE NUMBER IS ENTERED AND CONFIRMED, THE SCREEN WILL GO BLANK WHILE THE SEARCH IS CONDUCTED, IF FOUND, THE NUMBER WILL BE DISPLAYED AND IF NOT FOUND, YOU WILL BE RETURNED TO THE MENU.

SORT AND LIST (4) IS THE MOST REQUESTED PART OF THIS PROGRAM, BUT IT IS ALSO THE SLOWEST, THE COMPUTER COMPARES EACH FILE TO EVERY OTHER ENTRY AND PLACES IT IN THE CORRECT ORDER, WITH ALL EMPTY FILES PLACED FIRST, ONCE THEY ARE FILLED WITH A ZERO, IT TAKES A WHILE FOR ALL OF THIS TO BE PATIENT, BEFORE PRINTING ALL EMPTY FILES ARE BYPASSED AND ONLY THOSE WITH A NUMBER GREATER THAN ZERO ARE DISPLAYED.

DELETE (5) WORKS VERY SIMILAR TO SEARCH EXCEPT YOU ARE GIVEN THE OPTION TO DELETE AN ENTRY ONCE FOUND.

EXIT (6) ALLOWS SAVING TO TAPE OR EXIT THE PROGRAM RUN, ON THE TS 2068 THIS OPTION ALLOWS A DATA FILE LOAD OR SAVE AS WELL AS TAPE SAVING.

USER-PROMPTS ARE EXTENSIVE TO GUIDE YOU THROUGH EACH PART OF THIS PROGRAM, INKEY$ IS USED IN ALL CASES POSSIBLE TO SPEED UP EXECUTION.

MAXIMUM STORAGE IN 16K IS ABOUT 1750 ENTRIES AND ABOUT 6000 IN 64K RAM, MAXIMUM FOR THE TS 2068 IS ABOUT NUMBERS, TO CHANGE THE NUMBER OF ENTRIES YOU MUST MAKE THE FOLLOWING MODIFICATIONS TO THE PROGRAM.
*FOR 16K AND 2068 CHANGE FIGURE IN LINE 1090 TO DESIRED FIGURE AND LINES 88 AND 1098 TO THE DESIRED NUMBER PLUS 1.

FOR 64K CHANGE THE FIGURE IN LINE 1098 TO THE DESIRED FIGURE AND LINE 61 AND 1097 TO THE DESIRED NUMBER PLUS 1.

USE THE TIMEX/SINCLAIR MANUAL FOR EDITING PROCEDURES. REMEMBER MORE FILES YOU HAVE AVAILABLE THE LONGER YOUR LOAD/SAVE TIMES AS WELL AS YOUR SEARCH AND SORT TIMES.

10-10 FILE-N-SORT IS AVAILABLE ON A CASSETTE WITH ALL DOCUMENTATION PRESENTED HERE AS A PART OF THE KA2LHO HAM HELPER SERIES. FOR THE CASSETTE SEND A CHECK OR MONEY ORDER FOR $3.00 TO

KRAIG D. PRITTS-KA2LHO
NEELA ST.
CHADWICKS, NY 13319.

NOTE LISTING PRESENTED HERE IS FOR ZX-81, TS 1000 AND TS 2068. LISTING IS SIMILAR BUT ELIMINATES FAST AND SLOW COMMANDS.

```
  1 REM ++10-10 FILE-N-SORT++
  2 REM KRAIG D. PRITTS-KA2LHO
  3 REM KA2LHO HAM HELPER SERIES
  4 REM ST.  CHADWICKS  13319
  5 SLOW
 10 LET Y=0
 20 GOTO 8000
 30 LET A$=INKEY$
 40 IF A$="" THEN GOTO 30
 50 IF A$="C" THEN RET AN
 60 IF A$="M" THEN GOTO 100
 70 GOTO 30
 80 LET A$=""
 84 FOR S=3 TO 6
 86 PRINT AT S,0;AS
 88 NEXT S
 90 RETURN
 94 CLEAR 1201
 96 RETURN
 98 CLEAR 1201
100 PRINT AT 21,0;" PRESS R
    ETURN TO MENU "
102 LET A$=INKEY$
104 IF A$="" THEN GOTO 30
106 IF A$="R" THEN GOTO 64
108 GOTO 100
110 FAST
115 LET A=0
120 FOR X=1 TO
130 IF T(X)=0 THEN LET A=A+1
140 NEXT X
150 RETURN
160 REM ++MENU
170 SLOW
180 CLS
190 PRINT "  ++++++++++++++++++++
    ++++++++++++  10-10 NUMBER FI
    LE-SORT  ++++++++++++++++++++
    ++++++++++++"
200 PRINT AT 4,12;"MENU"
210 PRINT AT 6,0;"1 FOR INITIALI
    ZATION"
220 PRINT "2 TO ENTER NUMBERS"
230 PRINT "3 FOR SEARCH"
240 PRINT "4 TO SORT AND LIST"
250 PRINT "5 TO DELETE ENTRY"
260 PRINT "6 TO EXIT"
270 PRINT AT 14,0;"NUMBER OF EMP
    TY FILES="A
280 PRINT AT 15,0;"ENTER YOUR C
    HOICE"
290 LET B$=INKEY$
300 IF B$="" THEN GOTO 290
310 IF B$="1" THEN GOSUB 1000
320 IF B$="2" THEN GOSUB 1020
330 IF B$="3" THEN GOSUB 2000
340 IF B$="4" THEN GOSUB 3000
350 IF B$="5" THEN GOSUB 4000
360 IF B$="6" THEN GOSUB 5000
370 GOTO 290
1000 REM ++NEW LIST
1010 CLS
1020 PRINT "++++++++++++++++++++
    ++++++++++  NEW DATA FILE
    ++++++++++++++++++++
    ++++++++++"
1025 PRINT AT 4,0;"ARE YOU SURE
    ";AT 6,0;"REMEMBER, THIS STEP
    WILL CLEAR THE PRESENT FILE, I
    F ANY, FROM MEMORY AND ITS DATA
    WILL BE LOST IF NOT ALREADY ON
    TAPE"
1030 PRINT "PRESS Y TO CONTINUE
    OR R TO RETURN TO THE MENU."
1035 GOSUB 30
1040 GOSUB 30
1050 PRINT AT 4,0;"ENTER YOUR CH
    OICE REPRESENTING THE AMOUNT OF
     RAM YOU ARE USING.";AT 12;"A,
     16K";TAB 12;"B, 64K"
1060 LET B$=INKEY$
1065 IF B$="" THEN GOTO 1060
1070 IF B$="A" THEN GOSUB 60
1080 IF B$="B" THEN GOSUB 61
1090 IF B$="A" THEN LET Y=200
1095 IF B$="B" THEN LET Y=200
1096 IF B$="A" THEN LET T(201)=9
    9999999
1097 IF B$="B" THEN LET T(201)=9
    9999999
1098 IF B$<>"A" AND B$<>"B" THEN
     GOTO 1060
1100 GOSUB 83
1105 IF Y<>0 THEN GOSUB 77
1106 FAST
1107 FOR X=1 TO Y
1108 LET T(X)=0
1109 NEXT X
1111 PRINT AT 4,0;"  YOUR FILE
    IS NOW READY,  ";"NUMBER OF
    ENTRIES AVAILABLE=";Y
1115 SLOW
1120 GOTO 64
2000 REM ++INFO ENTRY
2010 CLS
2020 FAST
2030 FOR X=1 TO Y
2035 LET X=X+1
2040 IF T(X)=0 THEN GOTO 2030
2045 LET X=X-1
2050 NEXT X
2060 SLOW
2070 PRINT "SORRY --- THIS FILE
    IS FULL"
2080 GOTO 64
2090 CLS
2095 SLOW
2098 PRINT "++++++++++++++++++++
    ++++++++++  NEW DATA ENTRY
    ++++++++++++++++++++
    ++++++++++"
2100 PRINT AT 8,0;"10-10 NUMBER
    ";
2110 INPUT T
2115 PRINT T
2116 PRINT AT 10,0;"IS THIS CO
    RRECT (Y/N) ?"
2120 LET A$=INKEY$
2130 IF A$="" THEN GOTO 2120
2140 IF A$="Y" THEN GOTO 2150
2145 IF A$="N" THEN GOTO 2030
2147 LET T(A)=T
2150 LET A=A-1
2160 GOTO 100
3000 REM ++SEARCH FOR 10-10
    NUMBER
3010 PRINT "++++++++++++++++++++
    ++++++++++  SEARCH FOR 10-10
    NUMBER  ++++++++++++++++++++
    ++++++++++"
```

```
3030 PRINT AT 5,0;"ENTER THE 10-
10 NUMBER FOR WHICH YOU WOULD LI
E TO CONDUCT THIS SEARCH ON"
3040 INPUT TE
3050 PRINT TE
3060 PRINT AT 10,3;"A IS THIS CO
RRECT (Y/N)?"
3070 LET A$=INKEY$
3075 IF A$="" THEN GOTO 3070
3080 IF A$<>"Y" THEN GOTO 3010
3085 FAST
3090 FOR X=1 TO
3100 IF TE=T(X) THEN GOTO 3140
3110 NEXT X
3115 SLOW
3120 PRINT AT 12,0;"SORRY, THAT
10-10 NUMBER IS NOT IN THIS FILE
."
3130 GOTO 64
3140 GOSUB 60
3145 SLOW
3149 IF M$="S" THEN GOTO 6070
3150 PRINT AT 4,0;"THE 10-10 NUM
BER OF ";T(X);" IS ";X;" IN THIS FIL
E."
3160 PRINT AT 10,0;"DO YOU WISH
TO HAVE THIS SENT TO THE PRINTER
(Y/N)?"
3170 LET P$=INKEY$
3175 IF P$="" THEN GOTO 3170
3180 IF P$<>"Y" THEN GOTO 64
3190 LPRINT "10-10 NUMBER =";T
(X)
3200 GOTO 64
5000 REM ++SORT AND LIST IN ORDE
R
5010 CLS
5020 PRINT "********************
************LIST IN ORDER OF 10
-10 NUMBERS**********************
***********"
5030 PRINT AT 4,0;"YOU MAY SEND
THE INFORMATION TO:";AT 6,10;"1,
 SCREEN";AT 7,10;"2, PRINTER";AT
 8,10;"3, BOTH";AT 10,5;"ENTER Y
OUR CHOICE (1-3)"
5040 LET P$=INKEY$
5042 IF P$="" THEN GOTO 5040
5043 IF P$<>"1" AND P$<>"2" AND
P$<>"3" THEN GOTO 5040
5044 FAST
5050 LET CH=0
5060 FOR X=1 TO
5070 IF T(X)>T(X-1) THEN LET CH=
1
5080 IF T(X)>=T(X+1) THEN LET MI
D=T(X)
5090 IF T(X)>=T(X+1) THEN LET T(
X)=T(X+1)
5100 IF T(X)>=T(X+1) THEN LET T(
X+1)=MID
5110 NEXT X
5120 IF CH=1 THEN GOTO 5050
5130 CLS
5140 LET Z=0
5150 FOR X=1 TO
5155 IF T(X)=0 THEN GOTO 5210
5160 IF P$="1" OR P$="3" THEN PR
INT AT Z,0;T(X)
5165 IF P$="2" OR P$="3" THEN LP
RINT T(X)
5170 LET Z=Z+1
5175 SLOW
5180 IF Z=19 THEN PRINT AT 20,0;
"PRESS C TO CONTINUE OR R TO
 RETURN TO MENU."
5190 IF Z=19 THEN GOSUB 48
5200 IF Z=19 THEN CLS
5205 IF Z=19 THEN LET Z=0
5210 NEXT X
5220 PRINT "END OF FILE"
5230 GOTO 64
6000 REM ++DELETEION
6010 CLS
6020 PRINT "********************
************    DELETE A FILE
   ENTRY    ********************
**********"
```

```
6030 PRINT AT 4,0;"ENTER THE 10-
10 NUMBER YOU WOULD LIKE TO DELET
E."
6040 GOTO 3040
6050 GOSUB 60
6060 PRINT AT 4,0;T(X);" HAS BEE
N FOUND."
6100 PRINT AT 7,0;"TO DELETE THI
S ENTRY FROM THE FILE PRESS D
 TO RETURN TO THE MENU, WITHOUT
 DELETION, PRESS R."
6110 LET D$=INKEY$
6120 IF D$="" THEN GOTO 6110
6130 IF D$="D" THEN GOTO 6160
6140 IF D$="R" THEN GOTO 100
6150 GOTO 6110
6155 LET T(X)=0
6170 GOSUB 60
6180 PRINT AT 4,0;TE;" HAS BEEN
DELETED."
6185 LET A=A+1
6190 GOTO 64
7000 REM ++EXIT
7010 CLS
7020 PRINT "********************
************    EXIT PROGR
AM    ********************
**********"
7030 PRINT AT 4,0;"TO EXIT THIS
PROGRAM YOU HAVE THREE OPTIONS
 WHICH INCLUDE:";AT 7,0;"1, SAVE
 THE PROGRAM AND DATA TO TAPE
";AT 9,0;"2, RETURN TO THE MENU
WITH NO LOSS OF DATA";AT 11,
0;"3, SIMPLY END THE PROGRAM."
7040 PRINT AT 18,5;"ENTER YOUR C
HOICE (1-3)"
7045 LET E$=INKEY$
7050 IF E$="" THEN GOTO 7045
7055 IF E$="1" THEN GOTO 7100
7060 IF E$="2" THEN GOTO 100
7070 IF E$="3" THEN STOP
7080 GOTO 7045
7100 REM ++SAVE TO TAPE
7110 CLS
7120 PRINT "********************
************SAVE PROGRAM/DATA
 TO  TAPE ********************
**********"
7130 PRINT AT 4,5;"START RECORDE
R";AT 6,10;"PRESS ENTER"
7140 INPUT E$
7150 SAVE "10-10
7160 CLS
7170 GOTO 8000
8000 REM ++TITLE SCREEN
8005 SLOW
8010 CLS
8012 PRINT AT 1,0;"    MAILING AD
M. HELPER SERIES";AT 3,12;"PRESEN
TS"
8015 PRINT AT 6,0;"**************
********************";AT 21,
0;"**********
**********"
8040 PRINT AT 21,0;"(C)1984, KRA
IG D. PRITTS-MAILING"
8050 FOR I=1 TO 75
8060 NEXT I
8065 GOTO 100
9000 REM ++INITIAL SAVE
9010 PRINT "START TAPE  "PRESS
ENTER"
9020 INPUT E$
9025 CLEAR
9030 SAVE "10-10"
9040 SLOW
9050 CLS
9060 RUN
```

```
  20 REM "Codeair"
  30 LET h=0
  40 LET k=32
  50 LET l=0
  60 LET m=0
  70 LET w=9
 100 IF CODE INKEY$=55 THEN GO S
UE 7000
 104 IF CODE INKEY$=54 THEN GO S
UE 8000
 117 IF STICK (2,2)=0 THEN GO TO
 117
 120 LET a=PEEK 23672
 130 LET b=256*PEEK 23673
 150 LET d=a+b
 160 LET j=d-h
 170 IF j>1.6*w THEN GO TO 1000
 300 IF STICK (2,2)=1 THEN GO TO
 300
 320 LET e=PEEK 23672
 330 LET f=256*PEEK 23673
 350 LET h=e+f
 360 LET i=h-d
 380 IF i<w THEN GO TO 3000
 390 GO TO 4000
1000 REM "Start new character"
1001 IF j>3*w THEN GO TO 1040
1005 IF k=0 THEN GO TO 300
1010 PRINT AT l,m;CHR$ k
1013 LET m=m+1
1016 IF m=32 THEN GO TO 1025
1019 LET k=0
1022 GO TO 300
1025 LET l=l+1
1028 LET m=0
1030 GO TO 1010
1040 PRINT AT l,m;CHR$ k
1050 LET m=m+1
1060 IF m=32 THEN GO TO 1090
1070 LET k=0
1080 GO TO 1013
1090 LET l=l+1
1100 LET m=0
1110 PRINT AT l,m;" "
1120 GO TO 1080
3000 REM "Dot"
3010 IF k=0 THEN GO TO 5000
3020 IF k=69 THEN GO TO 5010
3030 IF k=73 THEN GO TO 5020
3040 IF k=83 THEN GO TO 5030
3050 IF k=72 THEN GO TO 5040
3060 IF k=50 THEN GO TO 5050
3070 IF k=84 THEN GO TO 5060
3080 IF k=65 THEN GO TO 5070
3090 IF k=78 THEN GO TO 5080
3100 IF k=77 THEN GO TO 5090
3110 IF k=85 THEN GO TO 5100
3120 IF k=82 THEN GO TO 5110
3130 IF k=87 THEN GO TO 5120
3140 IF k=68 THEN GO TO 5130
3150 IF k=75 THEN GO TO 5140
3160 IF k=71 THEN GO TO 5150
3170 IF k=79 THEN GO TO 5160
3180 IF k=86 THEN GO TO 5170
3190 IF k=88 THEN GO TO 5180
3200 IF k=89 THEN GO TO 5190
3210 IF k=90 THEN GO TO 5200
3220 IF k=141 THEN GO TO 5210
3230 IF k=140 THEN GO TO 5220
3240 IF k=143 THEN GO TO 5230
3250 IF k=139 THEN GO TO 5240
3260 IF k=142 THEN GO TO 5250
3270 IF k=137 THEN GO TO 5260
3990 GO TO 100
4000 REM "Dash"
4010 IF k=0 THEN GO TO 6000
4020 IF k=84 THEN GO TO 6010
4030 IF k=77 THEN GO TO 6020
4040 IF k=79 THEN GO TO 6030
4050 IF k=143 THEN GO TO 6040
4060 IF k=48 THEN GO TO 6050
4070 IF k=69 THEN GO TO 6060
4080 IF k=73 THEN GO TO 6070
4090 IF k=65 THEN GO TO 6080
4100 IF k=78 THEN GO TO 6090
4110 IF k=83 THEN GO TO 6100
4120 IF k=85 THEN GO TO 6110
4130 IF k=82 THEN GO TO 6120
4140 IF k=87 THEN GO TO 6130
4150 IF k=68 THEN GO TO 6140
```

2068 MORSE CODE READER (SEE NEXT PAGE)

```
4160 IF k=75 THEN GO TO 6150
4170 IF k=71 THEN GO TO 6160
4180 IF k=79 THEN GO TO 6170
4190 IF k=72 THEN GO TO 6180
4200 IF k=86 THEN GO TO 6190
4210 IF k=142 THEN GO TO 6200
4220 IF k=74 THEN GO TO 6210
4230 IF k=94 THEN GO TO 6230
4240 IF k=90 THEN GO TO 6240
4250 IF k=138 THEN GO TO 6250
4260 IF k=66 THEN GO TO 6260
5000 LET k=69: GO TO 100
5010 LET k=73: GO TO 100
5020 LET k=83: GO TO 100
5030 LET k=72: GO TO 100
5040 LET k=53: GO TO 100
5050 LET k=0: GO TO 100
5060 LET k=78: GO TO 100
5070 LET k=82: GO TO 100
5080 LET k=66: GO TO 100
5090 LET k=71: GO TO 100
5100 LET k=70: GO TO 100
5110 LET k=76: GO TO 100
5120 LET k=80: GO TO 100
5130 LET k=86: GO TO 100
5140 LET k=67: GO TO 100
5150 LET k=90: GO TO 100
5160 LET k=141: GO TO 100
5170 LET k=54: GO TO 100
5180 LET k=47: GO TO 100
5190 LET k=42: GO TO 100
5200 LET k=55: GO TO 100
5210 LET k=56: GO TO 100
5220 LET k=57: GO TO 100
5230 LET k=57: GO TO 100
5240 LET k=94: GO TO 100
5250 LET k=137: GO TO 100
5260 LET k=63: GO TO 100
6000 LET k=84: GO TO 100
6010 LET k=77: GO TO 100
6020 LET k=79: GO TO 100
6030 LET k=143: GO TO 100
6040 LET k=48: GO TO 100
6050 LET k=0: GO TO 100
6060 LET k=65: GO TO 100
6070 LET k=85: GO TO 100
6080 LET k=87: GO TO 100
6090 LET k=75: GO TO 100
6100 LET k=86: GO TO 100
6110 LET k=142: GO TO 100
6120 LET k=139: GO TO 100
6130 LET k=74: GO TO 100
6140 LET k=88: GO TO 100
6150 LET k=89: GO TO 100
6160 LET k=81: GO TO 100
6170 LET k=140: GO TO 100
6180 LET k=52: GO TO 100
6190 LET k=51: GO TO 100
6200 LET k=50: GO TO 100
6210 LET k=49: GO TO 100
6220 LET k=48: GO TO 100
6230 LET k=46: GO TO 100
6240 LET k=138: GO TO 100
6250 LET k=44: GO TO 100
6260 LET k=45: GO TO 100
7000 LET w=w-1
7010 PRINT AT 0,0;"w=";w;"
7020 RETURN
8000 LET w=w+1
8010 PRINT AT 0,0;"w=";w;"
8020 RETURN
```

programs and misc. other hardware/software items, send a business size SASE to KA2LHO HAM HELPER SERIES, Kraig D. Pritts, 3421 Oneida St., Chadwicks, NY 13319.

FOR SALE: MORSE CODE TEACHER II. UPGRADE UR LICENSE, TEACH NEW HAMS CODE CLASSES! ZX/TS-1000 teaches code fast! Sophisticated 8 1/2 K pgm sends perfect code audio at 1-20 WPM. Letters, numbers, punctuation. Random & stored text. Corrects your mistakes. Gives score. 9 practice options. Printer copy. Can key XMTR for auto CQ, etc. $8.95 for tape and doc. Clem Wehner K5KGM 2135A Willowwood, Scott, IL 62225. MONEY BACK GUARANTEE!

FOR SALE: 2K MORSE CODE TRANSLATOR for the TS1000/1500/ZX81. Program has two modes: 1)Code received through "ear" jack is scrolled across TV screen. NO HARDWARE MODIFICATIONS NEEDED. Up to 35 WPM. 2)Keyboard entries are changed into code which is available at "mic jack or TV speaker. Up to 100 WPM. This program was reviewed in June 84 issue of 73 mag. on page 92. $9.95+$1.00 S&H on cass. THOMSON SOFTWARE, PO BOX 1266, LOMBARD, IL 60148.

FOR SALE: Tape versions of the "MEMOTEXT' word-processor program. These are the ONLY tape copies approved by Memotech, Inc. Version V1-C available for immediate delivery; uses 8-16K RAM, requires Memotech Centronics I/F. Includes P. Hargrave's SDS, Help file, fuction screen, free memory report and other improvements. US$ 29.95 ppd. Write for further info, or info on soon-to-be released RS232 version, or versions usable with Aerco or Compusa disc (V2: 12-16K, V3: 40-48K with Oliger M1 mod). Fred Nachbaur, 902 Hoover St., Nelson, BC V1L 4X6 Canada.

FOR SALE: Spectrum owners, work RTTY on a 48K machine. Cassette programs include split screen, 7 memories, realtime clock, SW ID, all at 3 data rates. Package includes manual and printed curcuit board with instructions for building an interface. $40 post paid from Sweden. Also Spectrum CW progran to go with the same interface. $18 post paid. Hans p Eckert, SM3HBQ, Box 119, S-81300, Hofors, Sweden.

FOR SALE: BUFFERED BUSS expansion board $40 and I/O board $10. Both for ZX81, TS1000, & TS1500; I/O for TS2068. Bare boards ppd with documentation. **Budget Robotics & Computing**, Box 18616, Tucson, AZ 85731.

2068 Morse Code Reader
Malcolm Macaulay, KA6PMT

This program reads Morse code, by timing the period of closure of a contact connected to joystick port 2 of the 2068. It is compared to a parameter"w". A tenative character "K" is chosen, either "i" or "t" at the outset. As subsequent dots (ie. interval less than w) or dashes (ie. greater than or equal to w) are received, the character choice is revised appropriately. When the closure interval is found to be greater than 3w, the then selected character is printed. The speed range is not wide, with 20 wpm being the maximum. The program is also a bit critical of the operator's fist so I am not touting it as the ultimate. QZX readers are encouraged to help with improvements.

The circuit that I use in my receiver to close the joystick pushbutton contact has never been drawn in full. (Sounds like some of Bo's projects!..Ed.) I'll make an effort to draw it up with a brief description in response to your request.

P.S. AR prints an , and KN prints an *

(1119 Carmel Circle, Fullerton, CA 92633)

73, W4GHV & K5XY

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